



Central Valley Water Board Program Fact Sheet FY 2015-2016



Oil Field Program

Overview

California is the third largest oil producing state in the United States. Most of that production occurs in the Central Valley. In California, oil is usually comingled with water in underground formations. This oil/water mixture is extracted and then the oil is separated from the water, which is then called produced water or produced wastewater. Approximately 189 million barrels of oil and 2.9 billion barrels of produced wastewater were generated from California's onshore operations in 2015. A barrel (bbl) is equivalent to 42 gallons. Approximately 152 million bbls of oil and 2.1 billion bbls of this produced wastewater were generated primarily in the southern portion of the Central Valley. About 70 million bbls of produced wastewater were injected into aquifers of the Central Valley using disposal wells regulated under the State's underground injection control (UIC) program. Another, unquantified fraction of wastewater was used for enhanced oil recovery operations like steam flooding and water flooding. The remaining produced wastewater was disposed of by discharge to land primarily through unlined ponds. Where the quality is adequate, some of this wastewater was recycled for use as irrigation water. Other wastes generated by oil field operations include drilling muds and solids and sludges generated when tanks and equipment are cleaned. These materials are typically tested to confirm they are not hazardous, mixed with soil, and then used as road mix and berm materials within the oil fields.

The Oil Field Program consists of four primary regulatory activities: drilling muds from well development, produced water from well production, UIC practices, and well stimulation practices under Senate Bill 4 (or SB4).

Discharges to land include drilling mud, produced wastewater discharges including, but not limited, discharges to ponds, roads for dust control, and irrigation; and solids mixed with clean soil as road mix and berm material. These discharges are regulated under individual and general waste discharge requirements (WDRs), and when appropriate, enforcement orders, such as cleanup and abatement orders. Unpermitted discharges, spills, and other illicit discharges are subject to enforcement actions by the Board including the imposition of civil liabilities.

The federal Safe Drinking Water Act (SDWA) regulates the injection of wastes associated with oil and natural gas operations into underground formations through Class II injection wells, referred to as the UIC Program. The SDWA specifies the nature and character of an aquifer that is not expected to be a source of drinking water that can be exempted from SDWA protections. Oil field wastes can then be injected into those aquifers. The U.S. Environmental Protection Agency (USEPA) granted to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) regulatory primacy over the program in 1983. The Central Valley Water Board and State Water Board (Water Boards) staff, review aquifer exemption applications to ensure approval will not adversely affect waters of existing or potential beneficial use. Water Boards staff also review individual DOGGR draft UIC Project Approval Letters (PALs) (UIC well permits) to ensure the protection of water quality.

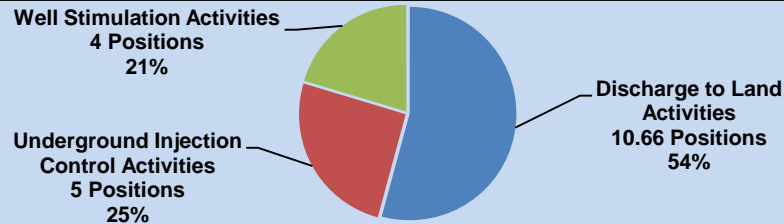
Senate Bill 4 (2013) enacted changes to the California Water Code regarding well stimulation activities, including hydraulic fracturing. A [Memorandum of Agreement \(MOA\)](#) between DOGGR and the Water Boards was signed in 2015 to delineate each agencies' authority, responsibilities, and notification and reporting requirements associated with protecting groundwater quality from well stimulation activities.

As of July 2015, groundwater monitoring must be in place prior to well stimulation, unless an exclusion from monitoring is allowed. Water Boards staff review the proposed monitoring plans and requested exclusions to ensure that stimulation treatments and well stimulation treatment-related activities will not adversely affect water quality.

Goals

The goal of the Oil Field Program is to properly regulate oil field discharges and oversee monitoring activities to ensure the protection of surface and groundwaters and human health. This includes issuing effective regulatory and monitoring orders for discharges to land in a timely manner. It also includes reviewing aquifer exemption applications, UIC permits, and SB4 related groundwater monitoring programs and providing appropriate comments to State Water Board in a timely manner.

Program Distributions (19.66 Positions)



Notable Accomplishments

Three Draft General Orders for Oil Field Discharges of Produced Water to Land

Staff circulated three Tentative General WDRs to regulate discharges of produced wastewater to unlined ponds for public comment. A public workshop was held in March 2016 in Bakersfield, and the Board conducted a hearing panel to consider the three orders at its August meeting. The proposed WDRs will be considered by the full Board at a future date.

Food Safety Expert Panel

The longtime practice of irrigating with treated oil field produced wastewater has recently generated public concern over the practice's potential health effects. In response, Board staff convened a panel of experts to determine whether the practice poses a threat to public health. The Panel held two public meetings, two closed meetings, and toured Chevron's Kern River oil field and the Cawelo Water District. Board staff issued numerous orders to oil field operators to obtain additional information on chemicals used in oil field operations. A website was created to provide information and data related to the Panel's efforts:

http://www.waterboards.ca.gov/centralvalley/water_issues/oil_fields/food_safety/index.shtml.

UIC and SB4 Activities

- Reviewed 10 UIC Project Approval Letters (PALs).
- Received seven aquifer exemption applications and completed reviews on four.
- Reviewed four SB4 groundwater monitoring plans.
- Reviewed two well stimulation permits.
- Staff attended approximately four meetings per week with State Board and DOGGR and/or USEPA on various UIC/SB4 related projects.

Notable Compliance and Enforcement Successes

- Issued 52 Cleanup and Abatement Orders to 43 operators discharging without WDRs to 122 unlined ponds or discharging to unlined ponds under inadequate WDRs. Issued 10 revised monitoring and reporting programs to operators with inadequate WDRs and MRPs.
- Assessed Administrative Civil Liability in the amount of \$85,000 for discharging well stimulation flow-back fluids to land.
- Issued a Cease and Desist Order to an operator discharging saline wastewater over good quality groundwater.
- Inspected 90 discharge sites.
- Issued 18 staff letters and 17 Water Code section 13267 Orders requiring information on injection well(s) that may be injecting Class II fluids into an aquifer that has not been properly exempted under the SDWA.
- Issued 10 Notices of violation to operators failing to submit complete information in response to the 13267 Orders.

Performance targets for fiscal year 2016/2017

Target Description	Target	Completed
Pond CAOs/CDOs	~100	52 ¹
Pond General WDRs	3	0 ²
Inspections	80	90

¹ CAOs issued to operators without WDRs. Operators with older WDRs to be issued new MRPs.

² Administrative drafts circulated in mid-May. Tentative WDRs issued on 9 June 2016.